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EXAMINER	
MENGISTU, AMARE	
ART UNIT	**PAPER NUMBER**
2673	

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/085,945	GETTEMY ET AL.	
	Examiner	Art Unit	
	Amare Mengistu	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25 and 28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25 and 28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/23/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "***the visual display unit being useable in a compact state when attached to the processing unit***" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6, 13 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over **Lebby et al**. (6,115,618) in view of **Failla** (5,128,662) and **Takafumi et al** (JP 10-020962).

3. In regard to claim 1, Lebby discloses a display system for a handheld computing device. See column 1, lines 56-58, disclosing, "It is also a purpose of the present invention to provide for a portable electronic device with a removable or detachable display." The display system comprises a processing unit having a first communication port and a visual display unit separable from the processing unit. See column 2, lines 47-49, and figure 2, "illustrating the attachment of a display and battery combination 12 positioned on portable electronic device 10." Further see figure 4, depicting a controller 52 within portable electronic device 10. This controller is understood to be a processor. Thus, the processing unit is portable electronic device 10 and the visual display unit is display 24 of display and battery combination 12. See figure 1 and column 3, lines 2-3, disclosing, "there is provided a wireless communication port 29". Note in figure 1 that wireless communication port 29 is provided on the processing unit, portable electronic device 10.

The visual display unit includes a visual display and a second communication port, the first communication port providing communication with the second communication port. See column 3, lines 35-37, disclosing, "display 24 may include a wireless connection so as to be in communication interface with portable electronic device 10."

Lebby further discloses that the first communication port provides communication with the second communication port when the visual display is separated from the processing unit. See column 3, lines 32-42, disclosing, "It should be understood that display 24 in this particular embodiment is formed so as to be detachable from battery source 26 for use separate and apart from portable electronic device 10. As previously stated, display 24 may include a wireless connection so as to be in communication interface with portable electronic device 10. In this particular embodiment, display 24 is in wireless communication with portable electronic device 10 by way of infra red connection port 29 (as illustrated in FIG. 1), thus signals between display 24 and portable electronic device 10 are wirelessly communicated to display 24. "

Lebby does not disclose that the display system can be expanded from an initial or storage state to present a larger visual display size.

Failla discloses a display system that can be expanded from an initial or storage state to present a larger visual display size. See column 1, lines 10-22, disclosing, "Specifically, it relates to display screens which are formed of a number of segments which may be when in use so arranged as to provide a substantial area for visual information display, yet which may be when not in use rearranged in compact relation

for storage and travel. In this way, for example, a display screen can be provided which has a usable display area considerably greater than that which the length and width of the portable device itself would ordinarily provide, yet which when said segments are collapsed into compact relation can be stored for traveling within a volume consistent with the dimensions of such device."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the invention of Lebby with the invention of Failla by having the display of Lebby expand from an initial or storage state to present a larger visual display size, as in the invention of Failla. One would have been motivated to make such a change based on the teaching of Failla that such a "display screen can be provided which has a usable display area considerably greater than that which the length and width of the portable device itself would ordinarily provide".

Lebby as modified by Failla did not explicitly teach that the display unit being useable in a compact state when attached to the processor. However, the patent of **Takafumi et al** is cited to teach that it is well known for a display unit to be in a compact state when attached to the processing unit (see, figs. 2 and 6). Here note that the processor unit is attached to the display units the same way as shown in fig.1 (32,11,21).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to incorporate the method reducing the display unit as taught by **Takafumi et al** into the display system of **Lebby** because this will provide the

information processor where a portable main body is miniaturized to be operated as a desktop type of display to accommodate the user with more flexible future.

4. In regard to claim 2, see rejection of claim 1.

5. In regard to claim 3, see rejection of claim 1. Folding the display is a retracting mechanism.

6. In regard to claim 4, Lebby discloses a support apparatus to anchor and support the visual display unit while it is in use. See rejection of claim 1. Note in figures 2 and 3 that portable electronic device 10 is a support and anchor for display 24. Also, display 24 can be used while anchored to electronic device 10. See column 3, lines 61-65, disclosing, "During operation, a user of portable electronic device 10 having positioned on a rear surface of first major portion 14 [note in figure 2 that element 14 is on the portable electronic device 10] display and battery combination 12, is able to control a contained virtual image display".

7. In regard to claim 5, Lebby discloses that the first communication port is housed in a first connection housing attached to the processing unit that mates with the second communication port housed in a second connection housing attached to the visual display unit. See rejection of claims 1. The first communication port, wireless communication port 29 of the processing unit, is housed within the connection housing that is portable electronic device 10. This connection housing is attached to the visual display unit (see figure 2 and 3 and claim 4 rejection). The second connection housing is the display battery combination 12, which houses the second communication port, the

wireless connection of display 24. The two wireless communication connections are in communication with each other, and are thus mated with each other.

8. In regard to claim 6, see rejections of claims 4 and 5.

9. In regard to claim 13, Lebby discloses that the first and second communication ports include wireless transceivers. See rejection of claim 1, disclosing that the communication connections are wireless. Further see figure 4, depicting the transceiver 50 of portable electronic device 10. The second transceiver is inherent.

10. In regard to claim 28, see rejection of claim 1.

11. Claims 1, 7, 10-12, 16-20 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Oliwa et al**. (4,856,088) in view of **Lebby et al**. (6,115,618) and **Failla** (5,128,662) further in view of **Takafumi et al** (JP 10-020962).

12. In regard to claims 1 and 16, Oliwa discloses a handheld computing device and a visual display unit detachable from the handheld computing device. See column 2, lines 14-17, disclosing "a portable type radio transceiver 10 having...a removable display module 12". The device comprises a processor and an information storage system. See figure 2, depicting display controller 42 and memory 48. Display controller 42 is understood to be a processor, as it processes information from all the other components of the transceiver, and memory 48 is an information storage system. A radio transceiver is understood to be a computing device as it sends and receives information and includes processing capability and a memory.

Oliwa further discloses a first communications port attached to the handheld computing device and that the visual display unit includes a visual display and a second communication port. See column 2, lines 34-38, disclosing, "On the rear of the display module 12 are electrical contacts corresponding to the contacts 22, 24, 26, 28 of the transceiver 10 through which electrical signals may be passed". These two sets of electrical contacts are understood to be the first and second communication ports, as they are used for communication between the display and transceiver.

Oliwa does not disclose that the second communication port coupled to the visual display communicates with the first communication port when the visual display unit is detached from the handheld computing device".

Lebby discloses an invention in which display communication port provides communication with a communication port of a handheld computing device when the visual display is separated from the handheld computing device. See column 3, lines 32-42, disclosing, "It should be understood that display 24 in this particular embodiment is formed so as to be detachable from battery source 26 for use separate and apart from portable electronic device 10. As previously stated, display 24 may include a wireless connection so as to be in communication interface with portable electronic device 10. In this particular embodiment, display 24 is in wireless communication with portable electronic device 10 by way of infra red connection port 29 (as illustrated in FIG. 1), thus signals between display 24 and portable electronic device 10 are wirelessly communicated to display 24. "

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Oliwa by having the display communication port communicate with a communication port of the handheld computing device when the visual display is separated from the handheld computing device, as in the invention of Lebby. One would have been motivated to make such a change based on the teaching of Lebby that such an arrangement allows the display to be used "separate and apart" from the handheld computing device.

Oliwa in view of Lebby does not disclose that the visual display unit can be expanded from a compact state.

Failla discloses a display system that can be expanded from an initial or storage state to present a larger visual display size. See column 1, lines 10-22, disclosing, "Specifically, it relates to display screens which are formed of a number of segments which may be when in use so arranged as to provide a substantial area for visual information display, yet which may be when not in use rearranged in compact relation for storage and travel. In this way, for example, a display screen can be provided which has a usable display area considerably greater than that which the length and width of the portable device itself would ordinarily provide, yet which when said segments are collapsed into compact relation can be stored for traveling within a volume consistent with the dimensions of such device."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the invention of Oliwa in view of Lebby with the invention of Failla by having the display of Oliwa in view of Lebby expand from an initial

or storage state to present a larger visual display size, as in the invention of Failla. One would have been motivated to make such a change based on the teaching of Failla that such a "display screen can be provided which has a usable display area considerably greater than that which the length and width of the portable device itself would ordinarily provide".

Oliwa as modified by **Lebby** and **Failla** did not explicitly teach that the display unit being useable in a compact state when attached to the processor. However, the patent of **Takafumi et al** is cited to teach that it is well known for a display unit to be in a compact state when attached to the processing unit (see, figs. 2 and 6). Here note, that the processor unit is attached to the display units the same way as shown in fig.1 (32,11,21).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to incorporate the method reducing the display unit as taught by **Takafumi et al** into the display system of **Oliwa** because this will provide the information processor where a portable main body is miniaturized to be operated as a desktop type of display to accommodate the user with more flexible future

13. In regard to claim 7, Oliwa discloses that visual display unit displays data uploaded from the processing unit while the visual display unit is separated from the processing unit. See column 2, lines 63-66, disclosing, "The display module comprises a display 32 and a memory 50 which stores a message or other data to be displayed when the display module 12 is removed from the radio 10." Further see column 3, lines

51-52, disclosing radio display data coupled from memory 48 into memory 50 and lines 58-59, disclosing, "the updated contents of memory 48 are copied into memory 50".

14. In regard to claim 10, Oliwa discloses that the visual display unit includes a power source to power the visual display unit to display data while the visual display unit is separated from the processing unit. See column 3, lines 2-5, disclosing, "A low capacity rechargeable power source 54 is provided within the display module 12 for providing power to the circuitry and display of the module when the module is disconnected from the radio."

15. In regard to claim 11, Oliwa discloses that the visual display unit includes memory and a microprocessor to store and retrieve data uploaded from the processing unit. See figure 2, depicting control circuitry 52 and memory 50 within display 12. Control circuitry 52 is understood to be a processor as it (see column 2, line 67 to column 3, line 1) "controls the display in a conventional manner and also provides a coupling to the control buttons 34, 36, 38 in a conventional manner." It is understood to be a microprocessor, since it is sized for a portable device. Further see column 3, lines 46-48, disclosing, "the display may be used to display messages or radio display data stored within the memory 50" and lines 58-59, disclosing, "the updated contents of memory 48 are copied into memory 50". Thus, the visual display memory 50 stores and retrieves data uploaded from the processing unit. Also note in figure 2 that the control circuitry 52 is linked to memory 50.

16. In regard to claim 17, Oliwa discloses that the visual display unit includes random access memory and a second processor. See figure 2, depicting control

circuitry 52 and memory 50 within display 12. See column 3, lines 46-48, disclosing, "the display may be used to display messages or radio display data stored within the memory 50" and lines 58-59, disclosing, "the updated contents of memory 48 are copied into memory 50". Thus, memory 50 is random access memory, as information can be copied into and retrieved from memory 50. Control circuitry 52 is understood to be a processor as it (see column 2, line 67 to column 3, line 1) "controls the display in a conventional manner and also provides a coupling to the control buttons 34, 36, 38 in a conventional manner."

17. In regard to claim 18, Oliwa discloses that the second processor can access information stored on the random access memory for display on the visual display. See column 3, lines 46-52, disclosing, "the display may be used to display messages or radio display data stored within the memory 50 in the display module. External controls 34, 36, 38 allow...the display of radio data...since the radio display data has been couple...into memory 50." Note in figure 2 that control circuitry 52 (the second processor) is the link between external controls 34, 36, 38 and memory 50. Thus, the external controls allow the display of the memory contents when the second processor accesses this information.

18. In regard to claims 12 and 19, Oliwa discloses that the visual display unit includes a navigation apparatus to instruct the processing unit to access information in the random access memory for display on the visual display. See rejection of claim 18. External controls 34, 36, 38 are a navigation apparatus. Note in figure 1 that external controls 34, 36, 38 are buttons.

19. In regard to claim 20, Oliwa discloses that information is displayed on the visual display while the display unit is detached from the handheld computing device. See column 2, lines 63-65, disclosing, "The display module 12 comprises a display 32 and a memory 50 which stores a message or other data to be displayed when the display module 12 is removed from the radio 10."

20. In regard to claim 22, see rejection of claim 10.

21. In regard to claim 23, see rejection of claim 16.

22. In regard to claim 24, Oliwa discloses that the handheld computing device includes a storage means for the visual display unit in the compact state. See rejection of claim 16, disclosing a compact state. Further see column 1, lines 14-17, disclosing "a portable type radio transceiver 10 having an enclosure 11 for containing...a removable display module 12". This enclosure 11 is a storage means for the visual display unit, removable display module 12.

23. In regard to claim 25, Oliwa discloses that the handheld computing device includes a mechanism to anchor and support the visual display unit in the expanded state. See rejection of claim 16, disclosing an expanded state. Further see rejection of claim 24. Radio transceiver 10 has enclosure 11, within which the visual display is anchored and supported. Further see column 2, lines 22-26, disclosing "in the enclosure 11...one or more contacts 22, 24, 26 are mounted. Behind one or more of these contacts are magnets which will be used to secure the display module to the enclosure 11".

24. Claims 8, 9 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Oliwa** et al. (4,856,088) in view of **Lebby et al.** (6,115,618) , **Failla** (5,128,662) and **Takafumi et al** (JP 10-020962) as applied to claims 1 and 16 above, and further in view of "**A Comparison of Display Technologies for E-Books" by Dr. J. William Doane.**

25. In regard to claims 8 and 9, Oliwa in view of Lebby further in view of Failla discloses an invention similar to that which is disclosed in claims 8 and 9. See rejection of claim 1 for similarities. Oliwa in view of Lebby further in view of Failla does not disclose that the visual display unit includes a bi-stable visual display or is implemented using e-paper technology.

In the article "A Comparison of Display Technologies for E-Books", Doane discloses on page 4 that bistable displays are "particularly attractive for the e-book because the display holds the image in memory without any applied power while the reader is viewing the page. Power is applied only when the e-book is paged or updated to display a new image." Doane further teaches, "This is a tremendous energy saving and a dramatic improvement on the operating time of a battery." Also note on page 1 that Doane's article focuses on displays for e-books, or "electronic display media that begin to match the essential qualities of paper." This is understood to be e-paper.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Oliwa in view of Lebby further in view of Failla by having the visual display be a bi-stable visual display, implemented using e-

paper technology, as suggested by Doane. One would have been motivated to make such a change based on the teaching of Doane that such a display causes "a tremendous energy saving and a dramatic improvement on the operating time of a battery."

26. In regard to claim 21, see rejection of claims 8 and 9. Note that Doane discloses, "Power is applied only when the e-book is paged or updated to display a new image", and "the display holds the image in memory without any applied power". Thus, the bi-stable display can display uploaded information without power requirements.

27. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Oliwa** et al. (4,856,088) in view of **Lebby et al.** (6,115,618) , **Failla** (5,128,662) and and **Takafumi et al** (JP 10-020962) as applied to claim 1 above, and further in view of **Morrison et al.** (2002/0154382 A1).

28. In regard to claims 14 and 15, Oliwa in view of Lebby further in view of Failla discloses an invention similar to that which is disclosed in claims 14 and 15. Oliwa in view of Lebby further in view of Failla does not disclose that the visual display is at least partially transparent and includes a transparent shutter layer.

Morrison discloses an invention in which a visual display is transparent with a transparent shutter layer. See paragraphs [0029], [0034] and [0035], disclosing a nanoparticle or nanoparticle-containing layer. Further see paragraph [0037], disclosing, "the noanoparticles appear transparent to the eye" and further teaching, "Because one of the states of the nanoparticles is transparent, such a display of the present invention

functioning as a light valve or shutter could be used in conjunction with any known type of electro-optic medium to increase the number of display states which can be obtained from each pixel of the electro-optic medium."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Oliwa in view of Lebby further in view of Failla by having the visual display be at least partially transparent, including a transparent shutter layer, as in the invention of Morrison. One would have been motivated to make such a change based on the teaching of Morrison that such a display "could be used in conjunction with any known type of electro-optic medium to increase the number of display states which can be obtained from each pixel of the electro-optic medium."

Response to Arguments

29. Applicant's arguments with respect to claims 1-25,28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

30. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amare Mengistu whose telephone number is (571) 272-7674. The examiner can normally be reached on M-F,T-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Amare Mengistu

Primary Examiner
Art Unit 2673

AM

Oct.28,2005